AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111
Serial Number: 10/632,131
Filing Date: July 31, 2003
Title: ADDRESS TRANSLATION USING A PAGE SIZE TAG (AS AMENDED)

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IN THE CLAIMS

Please amend the claims as follows:

1.   (Canceled)

2.   (Currently Amended) ~~The method of claim 1, wherein the translating further includes,~~ A method comprising:

translating a virtual memory address into a physical memory address, the translating including,

creating a first page size tag;

choosing an entry in a translation lookaside buffer, wherein the entry stores a second page size tag and a page frame number;

comparing the first page size tag with the second page size tag; ~~and~~

if the first page size tag is equal to the second page size tag, using the page frame number to form the physical memory address, and

if the first page size tag is greater then the second page size tag, generating a miss indication.

3.   (Currently Amended) The method of claim [[1]] 2, wherein the translation lookaside buffer is N-way set associative.

4.   (Currently Amended) The method of claim [[1]] 2, wherein the translation lookaside buffer is a second level translation lookaside buffer.

5.   (Currently Amended) The method of claim [[1]] 2, wherein the page size tag is represented in a 4-bit string.

6.   (Original) A method comprising:

searching a translation lookaside buffer (TLB) to resolve a virtual memory address,

wherein the TLB includes a plurality of entries, and wherein one or more of the entries include a

TLB page size tag and a page frame number, the searching including,

comparing a first page size tag with the TLB page size tag of an entry in the TLB,

wherein the first page size tag is selected from a search order list; and

after determining the first page size tag is less than or equal to the TLB page size

tag, writing the page frame number to a predetermined memory location;

after determining the page size tag is greater than to the TLB page size comparing

a second page size tag with the TLB page size tag of the entry, wherein the second page size tag

is selected from the search order list.

7.   (Original) The method of claim 6, wherein the translating further includes, after

determining the page size tag is greater than the TLB page size tag, generating a miss indication.

8.   (Original) The method of claim 6, wherein the translation lookaside buffer is N-way set

associative.

9.   (Original) The method of claim 6, wherein the translation lookaside buffer is a second

level translation lookaside buffer.

10.   (Original) The method of claim 6, wherein the page size tag is represented in a 4-bit

string.

11.   (Canceled)

12.   (Canceled)

13.   (Currently Amended) ~~The apparatus of claim 11,~~ An apparatus comprising:

        <u>a translation lookaside buffer (TLB), the TLB including a plurality of entries, the</u>

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entries including,

        a TLB page size tag field; and

        a page frame number field;

    a search list unit to transmit a page size tag based on a search list, wherein the search list

unit is updated according to a least recently used policy;

    a selection logic to select an entry of the plurality of entries based on the page size

tag; and

    a comparator to compare the page size tag with the contents of the TLB page size

tag field of the selected entry.

14.   (Currently Amended) The apparatus of claim [[11]] 13, wherein the comparator

generates a hit indication if the page size tag matches the contents of the TLB page size tag field.

15.   (Currently Amended) ~~The apparatus of claim 11,~~ An apparatus comprising:

    a translation lookaside buffer (TLB), the TLB including a plurality of entries, the

entries including,

        a TLB page size tag field; and

        a page frame number field;

    a search list unit to transmit a page size tag based on a search list;

    a selection logic to select an entry of the plurality of entries based on the page size

tag; and

    a comparator to compare the page size tag with the contents of the TLB page size

tag field of the selected entry, wherein the comparator generates a miss indication if the page size

tag is greater than the contents of the TLB page size tag field.

16 - 20 (Canceled)

21.   (New) The apparatus of claim 13, wherein the TLB is a second-level N-way set

associative TLB.

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22. (New) The apparatus of claim 15, wherein the TLB is a second-level N-way set associative TLB.

23. (New) The apparatus of claim 15, wherein the comparator generates a hit indication if the page size tag matches the contents of the TLB page size tag field.